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EVALUATION OF THE HOLDINGS IN SCIENCE/TECHNOLOGY IN THE UNIVERSITY OF IDAHO LIBRARY. PUBLICATION NUMBER TWO.

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Standard checklists, guides to the literature, holdings of libraries known for excellence, lists of journals covered in indexing and abstracting services, checklist of recommended books and journals published by professional societies, references cited in terminal bibliographies, and lists of professional society publications were used to check the Library's science and technology holdings. Each subject area of the collection is discussed individually with specific recommendations listed. General recommendations include some form of continuing survey of library holdings by each department, appointment of a liaison officer at a college and/or departmental level to work with the librarian in selection, and coordination of selection with the Washington State University Library. (CC)

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EVALUATION OF THE HOLDINGS IN SCIENCE/TECHNOLOGY IN THE UNIVERSITY OF IDAHO LIBRARY

ROBERT V. DUNNS, JR.
SCIENCE/TECHNOLOGY LIBRARIAN

The Library
University of Idaho
Moscow

June 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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University of Idaho Library - Publication Number Two

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UNIVERSITY OF IDAHO LIBRARY PUBLICATIONS:

Number One - The Earl Larrison Collection of Sir Walter Scott

Number Two - Evaluation of the Holdings in Science/Technology in the University of Idaho Library

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TEN YEARS OF PROGRESS

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A. INTRODUCTION

1. Background and Purpose. In 1959, Mr. Beck, then Science/Technology Librarian, prepared for the faculty an Evaluation of the Holdings in Science and Technology in the University of Idaho Library. This publication offered the faculty a critical description of the collection pointing out its strengths and weaknesses. That it was useful has been attested to by a continuing demand for copies among the faculty on our campus as well as by large number of requests from other campuses over the United States. Ten important years have passed since this survey was prepared. It is time again to review the library's pattern of development in order to make certain that the growth of the collection is oriented toward the needs of our faculty and curriculum.

In 1958, the Science/Technology Library contained 23,436 periodical volumes and 33,883 books. In 1967, these figures had grown to 43,792 periodicals and 57,923 books. This activity is typical of the coordinated thrust toward excellence seen over the entire Library. Indeed, the period has been one of growth over the entire University. The number of faculty as well as the number of disciplines to be served has increased. The interests of the faculty have grown and new faculty members have made new demands upon the Library's collection and personnel. Today Idaho is placing more emphasis upon research both pure and applied. A young, aggressive group of research-oriented faculty are providing an immense stimulus to the growth of the University. New courses are constantly being added to the curriculum and the University has undertaken new responsibilities in many areas.

Perhaps the most significant development during this period has been the decision by the Board of Regents to grant a doctoral degree. Nine years ago there were no doctoral degrees at Idaho. Today doctorates are being offered in thirteen disciplines by the science and engineering faculties. This decision has had a significant effect upon the character of the Library's collections in that it has demanded they become research collections in order to support a research program in these disciplines.

A research library differs in many ways from one supporting exclusively an undergraduate or master's program. It requires more foreign language journals, holdings in greater depth, i.e., complete runs of serials, and increased emphasis upon the ephemeral, seldom used, type of material. The collections in a research library must have no restrictions as to language, date, place, or form of publication. These requirements have placed heavy demands upon the library's resources and skills.

Because of the magnitude of the task involved in preparing this report, there was not sufficient time to survey in detail each discipline or even each department. The reader can, however, obtain a rough idea of the library holdings for disciplines not covered by examining the Tables accompanying this section. While they do not present a complete picture, they do give a quantitative indication of our holdings when compared with the titles used in standard checklists.

Two large areas not covered in this report and worth special mention are agriculture and medicine. Both are of great importance to work at the University and one of them, agriculture, relates directly to a basic industry within the state as well as to an important segment of the University's curriculum. It is hoped that a thorough review of library holdings for both areas can be accomplished in the near future.

Agriculture is one of Idaho's basic industries, with the curriculum and research efforts in the College reflecting needs throughout the state in both pure and applied research. The library collection is passable but will require attention in special areas. For example, it would be useful to evaluate library holdings in terms of their ability to support research in selected crops, i.e., potatoes, onions, grains, stone fruits, peas, etc. The reader will also find the specialized bibliographies of Stanly (10), Davis (11), and the National Agricultural Library (8) helpful in evaluating library holdings in agriculture.

In 1964 the National Library of Medicine published a list of basic science books in their reference collection compiled by Marjory H. Wright (12). This is a collection of well-known textbooks, standard manuals, and comprehensive treatises on anatomy, biochemistry, biophysics, histology, etc. All are recommended titles for librarian supporting work in the medical or paramedical sciences. Out of the 116 titles listed here, we have 77 although our holdings include many incomplete sets.

3. Why This Study. It is precisely this forward and stretching toward new goals which has demanded that the library now reevaluate its goals to make certain they are in accord with the curricular and research patterns at Idaho. It is in partial fulfillment of these responsibilities that we have prepared this study of our holdings. It is extremely important that the library's goals be in phase with those of the University. But until the library has a clearly focused picture can it begin to develop areas of excellence and to specialize. The purpose of this report, then, is to assist each of the Colleges and Departments concerned in bringing their current needs into better focus and in obtaining a better perspective on future library requirements for their educational tasks.

Accompanying each section is a list of recommendations. These are not intended to advocate firm commitments to the acquisition of any titles; rather they have been placed in this report to bring these titles to the attention of the department concerned and to seek guidance from the departments and colleges in discovering ways in which the library can better support the research interests and curriculum at Idaho. Many of the faculty will have titles which they wish added and some will even wish to delete items. This is healthy and should be encouraged. Nor does the Library anticipate buying all these journals, books, and backfiles in this biennium or even in the next two or three biennia. This would involve a tremendous sum of money and would not be in the best interests of the University. These recommendations are merely guidelines to elicit direction and guidance from the faculty.

3. Goals of Study. Therefore, we are proposing that the library develop along two parallel paths toward excellence: seeking first of all, a well chosen, balanced undergraduate collection to serve all areas both in the sciences and outside the sciences, and second, the development of holdings in depth for those disciplines in which the University now offers graduate degrees. It is further suggested here that greatest emphasis be placed on developing those parts of the collection directly supporting or involved in a doctoral program.

One final point is worth emphasizing. Research collections are not built overnight. It takes many years of patient accumulation, minute attention to detail and aggressive, imaginative collecting before an adequate research collection begins to develop. It is hoped that this survey will assist the librarian in determining the adequacy of the present collections and the direction which future growth should take.

4. Interrelationships of Subject Areas. It is a fairly common cliche among scientists that nobody else uses library materials in his area. Such a statement indicates a lack of understanding of the basic nature of science today. It is true that only the trained specialist will understand much being done on the frontier of his discipline. But this certainly does not apply to every aspect of any given discipline. The physicist and engineer will use mathematics books. The geologist will use botany books and the ecologist is likely to use materials for any of these disciplines. Indeed, so common has this practice become that we find whole areas named for two disciplines - biophysics, biochemistry, geobotanical prospecting, medical meteorology, medical entomology, etc. The point is that a journal or book published in one field will often be needed by someone in another field. Therefore, our library cannot be strong in one area without the requisite supporting strength in related areas. This is not intended to evocate strength in every area, rather it is a plea for a more realistic concept of what a library collection should be and do.

B. METHODOLOGY OF THIS STUDY

1. Discussion. What are the quantifiable requirements, if any, for determining the adequacy of a science/technology library and how are they to be measured? There is no single criterion, other than the ability to satisfy a certain percentage of the demands made upon it, for determining the adequacy of a library collection. There are, however, a number of quantitative standards which, when taken together, offer one a general perspective of the collection and a better concept of that elusive factor "adequacy." These are as follows: the holdings of an library can be compared with titles listed in standard library checklists, with the holdings of other libraries known for their competence in a field, with lists of journals covered by indexing/abstracting services for the discipline, with checklists of recommended books and journals for a particular discipline published by professional societies, with the references cited in terminal bibliographies, and against lists of their own publications issued by the professional societies. By using several of these criteria it will be possible to develop a more realistic picture of the adequacy of our science/technology library collections at least. Admittedly, each of these constitutes a quantitative measure. However, the fact that they are also measures to a degree of user satisfaction (ability to locate a given item) and include the so-called "standard or best lists" should lend to them a qualitative nature as well as a certain degree of credence. There are a number of lists available from such professional organizations as the American Institute of Physics (6), Committee on the Undergraduate Program in Mathematics (3), the Engineers' Council for Professional Development (27), etc. Indeed, this author has encouraged the professional groups, as those best informed about their technical literature and the ones who stand to gain most from strong collections, to prepare such lists. The responses to this suggestion have been mixed and not altogether positive. However, these lists would be of tremendous value to all parties concerned and should be undertaken at the professional society, institute, etc. level by subgroups within these organizations created especially for this purpose. Another point worth considering here is the ability of the library to satisfy requests made for items listed in terminal bibliographies. Of all the criteria listed this, together with the selective lists and guides prepared by professional groups, come closest to being qualitative in nature, since both are defined and inclusion is presumably limited to the "best" and most "pertinent" to the subject discussed. Inclusion in such a bibliography is therefore at least partially a qualitative matter, and library holdings of these titles then become of related qualitative significance. Granted that this assumption is not always valid and granted that anyone who buys a title - either journal or monograph -

simply because it appears on a given list is less than intelligent, or at least here some yardstick against which to measure the value of our collection - remembering, however, that our library collection must be evaluated in the context of the curricular patterns and research interests at Utica.

Intuitively there exists a definite relationship between the size of a given collection and the ability of that collection to respond to the needs of its clientele. This can and should be expressed in terms of a probability. The larger the collection becomes, the greater is the probability that it will meet the needs of its patrons, assuming the collection has been intelligently selected. But since the library must be concerned with limitations of time, staff, money, and space, the problem becomes one of determining the optimum size. Essentially, what is being measured then is not the quality or size of a collection, but the probability that a given group of books and serials will be able to satisfy the needs of its clientele.

The library is fully cognizant of the pitfalls and fallacies involved in any quantitative evaluation of library facilities. Nothing can be quite so misleading as statistics. This is especially true for a library collection where quantitative figures bear little relationship, other than an increase in the probability of satisfaction, to the quality of the collection. The author is not unmindful of this situation. However, while figures do not give the whole story they do form a significant portion of the story and any attempt to determine a collection's value to the public must include some statistical information.

A final word should be said in regard to the use of checklists. No library should accept everything mentioned in any given list simply because it appeared on that list. This would soon lead to national disaster with libraries becoming carbon copies of one another. Each library must seek its own individuality in terms of the people who are to use the collections. There are at best guides of a significant library collection. And it should be emphasized again that the entire selection process is best thought of as a continuing dialogue between librarians, faculty, and students in their pursuit of a common goal - knowledge.

3. What are the criteria the criteria against which we shall measure our library are as follows:

1) How do our holdings compare with lists of recommended library materials published by the various professional societies?
2) How many of the publications issued or sponsored by these professional societies does the library receive?
3) What percentage of the items cited in significant received bibliographies is the library able to supply?
4) What index and abstract coverage is available for a discipline and how adequate is our coverage?
5) What percentage of the serials covered by the significant indexing or abstracting services can the library supply for a given discipline?
6) How many of the publications (both serial and monographic) recommended in the so-called "standard" checklists can we provide?
7) How well do Utica's holdings compare with the guides to the literature (both continuing and non-recurring) which have been published?
In addition to the general checklists mentioned above, the librarian and faculty have available to them a number of new subject oriented guides to the literature. These can be extremely helpful both to the novice and to the

experienced library user. Two publishers, Interscience and Pergamon, have announced a series of these guides, with each volume devoted to a particular subject. A selected list of literature guides available at time follows: atomic energy (22); biology including the related fields of bacteriology, botany, physiology, pathology, and biochemistry (4); chemistry (21); electrical engineering (22); and geology (23).

4. TECHNIQUES OF SELECTION

a. Available aids. While the scholar is familiar with those journals in his field which carry book reviews, he may tend to overlook the more important general science periodicals which also contain critical reviews of new books from all fields of science. Some of the better examples are: Science, Scientific American, Nature (London), or American Scientist; and he may not even be aware of the numerous sources used by the science librarian in selecting books for the collection. Both Science and Nature have annual compilations of new science books. The Library Journal issues an annual review of science books in March. Stechert-Hafner Book News covers the foreign book field and is particularly strong in the coverage of handbook and treatise sets as well as symposia, conferences, congresses, and meetings.

The American Book Publishing Record which appears monthly includes scientific, medical, and technical books published in the United States. This is supplemented annually into American Scientific Books which continues the earlier book by Harkins called Scientific, Medical, and Technical Books.

Aside from the usual professional journals, where can the scientist or engineer normally expect to find reviews of the "best" books in his discipline? The following is a list of general aids or indexes that are available to help the scholar purchasing books for his discipline:

a) The Science Service Publications are not only source sheets but also Science Book Review Index which offers the reader excerpts from reviews appearing in the "... current scientific and technical trade journals ..." Emphasis is on the physical, earth, engineering, and mathematical sciences with occasional reviews of general science books as well as the life sciences, biology, zoology, and agriculture. This index to book reviews which have appeared in the journals should be thought of as an evaluative rather than as an announcement service. It is compiled and edited in the Science and Technology Department of the Carnegie Library of Pittsburgh.

b) New Technical Books: A Selective List with Descriptive Annotations published by the New York Public Library "... is a selective list of noteworthy American imprints ... in the Science and Technology Division of the New York Public Library. Noteworthy foreign works ... may also be included from time to time ... Subject emphasis is on the pure and applied physical sciences, mathematics, engineering, industrial technology, and related disciplines ... with books in the natural sciences included from time to time. ... The books, including reference works, range from technician and introductory-college level to highly specialized advanced graduate and research level ..."

c) Choice: Books for College Libraries is a publication of the Association of College and Research Libraries. It contains critical reviews of new books selected for the liberal arts curriculum from those published in the United States and Canada. The reviewers teach undergraduate and graduate courses in junior colleges, colleges, and universities. "... it reviews approximately

90% of the American university press publications and most of the serious fiction and non-fiction of American Commercial publishers ... Choice is especially noted for its comparisons of new books with those long established as the outstanding works in their field."

d) Science Books: A Quarterly Review is a publication of the American Association for the Advancement of Science. It includes trade books, textbooks, and reference books in the pure and applied sciences for students in the elementary and secondary grades as well as the first two years of college. To a limited extent it covers advanced and professional books for students and teachers. For each it gives an evaluative annotation of about a paragraph with notations regarding reader level and whether highly recommended, recommended, acceptable, or not recommended.

2. Free Material. All libraries find themselves occasionally in the paradoxical situation of having to refuse so-called free materials. The paradox lies in the fact that there is no such thing as a free publication, since all library materials cost money to organize, process, and store. However, there is a vast amount of material which can be obtained for a very small initial cost. Such material will enable a library to increase the usefulness of its collections substantially when it is chosen with care. This Library receives, as do most libraries, a constant stream of such material both as a direct gift and on exchange. It comes in the form of house organs, annual reports, newsletters, progress reports, experiment station publications (engineering and agricultural), state, museum, society publications, etc., etc. This Library makes a special effort to keep material which supports the curriculum, contains material of a scholarly nature, is indexed, is of interest to the faculty, or is appropriate to this geographical region. Following these guidelines the Library has a fairly complete collection of agricultural experiment station publications. The collection of engineering experiment station publications is growing and greater emphasis is being placed upon obtaining the publications in mining and geology issued by local, regional, or national agencies. We now receive engineering publications from twenty experiment stations on a regular basis. With the exception of material from the U.S. Geological Survey and the U.S. Bureau of Mines which comes automatically, the Library's holdings for this type of material in the earth sciences are at best weak. On a regular basis the Library receives publications from only five state bureaus of mines and these are far from complete.

The Library currently receives publications from twenty-three state academies of science as opposed to the eight we were receiving in 1939. Some of these are free and some like the Annals and Transactions of the New York Academy of Sciences are quite expensive. The quality of the work published varies from the professional scholarly articles published in the Papers of the Michigan Academy of Science, Arts, and Letters to the local amateurish work published by some Academies. The emphasis in these Academy of Science publications has been heavily in the biological sciences, but more and more papers in the physical and mathematical sciences are finding their way into this medium. These publications deserve more attention than they have had in the past and some consideration will have to be given to closing the gaps in the more important sets, particularly those from the Connecticut Academy of Arts and Sciences, the Proceedings of the Academy of Natural Sciences of Philadelphia, and the Annals of the New York Academy of Sciences.

3. Recommendations For The Science/Technology Library.

a) That each Department continue to survey the Library holdings for its discipline and to make appropriate recommendations to the Library.

b) That each Department encourage the professional organizations for their discipline to sponsor lists of recommended library materials.

c) Consideration be given to filling in the backfiles of general, interdisciplinary periodicals, i.e., Discovery, Nature, Compte Rendus, New Scientist, etc.

d) That more attention be given to the acquisition of undergraduate textbooks to supplement the reading of poorly prepared students and to assist the scholar seeking a simple discussion of phenomena outside his field.

e) That continuous attention be given to library holdings at WSU so that the best use can be made of our library funds and so that area resources can be developed to the advantage of both schools.

f) That a library representative or liaison officer be appointed at a College and/or Department level to work with the librarian in the selection of library materials.

g) That each Department on campus coordinate the growth of library materials for their discipline with their Departmental counterpart on the WSU campus in order that regional resources may be strengthened.

4. Tables Showing General Breakdown Of The Collection.

a. TABLE I

LIBRARY HOLDINGS IN SCIENCE/TECHNOLOGY 1938-1967

	BOOKS		PERIODICALS	
	Natural Sciences	Applied Sciences	Natural Sciences	Applied Sciences
1938	13,281	22,404	7,284	10,172
1960	15,142	21,460	8,421	22,808
1962	17,663	23,323	9,793	24,764
1964	20,910	29,803	12,194	26,646
1966	23,778	30,206	14,428	27,303
1967	26,490[1]	31,433[2]	16,341[1]	27,451[2]

b. TABLE II

(From Farber's Classified List of Periodicals for the College Library)(13)

SUBJECT	TITLES AT HAND (1968)	1938	1968
Biology	36 out of 36	Not Covered	100%
Chemistry	21 out of 21	86%	100%
General Science	20 out of 20	95%	100%
Geography	10 out of 10	Not Covered	100%
Geology	11 out of 11	82%	100%
Home Economics	17 out of 18	Not Covered	94%
Mathematics	10 out of 11	82%	91%
Physics	19 out of 19	95%	100%

[1]Includes geography, anthropology, pure sciences (HB-HF, Q)
[2]Includes physical education, medicine, agriculture and technology (GV, S-T)

6. TABLE III

(From Brown's Most-Cited Periodicals Lists)(26)

SUBJECT	TITLES AT IOWA (1948)	1933	1948
Botany	24 out of 25	87%	96%
Chemistry	23 out of 25	92%	92%
Entomology	21 out of 25	67%	84%
Geology	20 out of 25	80%	80%
Mathematics	19 out of 25	60%	72%
Physics	25 out of 25	80%	100%
Physiology	16 out of 25	52%	64%
Zoology	18 out of 25	67%	72%

6. TABLE IV

(From Ulrich's International Periodicals Directory)(2)

SUBJECT	TITLES NOW AT IOWA	1933	1948
Aeronautics	21 out of 233	Not Covered	9%
Agriculture (including Dairying and Livestock)	132 out of 634	21%	20%
Biological Sciences (including General Biology, Biophysics)	39 out of 219	32%	17%
Botany	67 out of 152	43%	44%
Chemistry (not included below)	43 out of 210	24%	21%
Analytical	8 out of 20	Not Covered	40%
Biological	18 out of 43	Not Covered	40%
Organic	4 out of 21	Not Covered	19%
Physical	7 out of 30	Not Covered	23%
Crystallography	1 out of 7	Not Covered	14%
Cytology and Histology	7 out of 17	Not Covered	41%
Electricity and Magnetism	30 out of 313	Not Covered	9%
Engineering (not including below)	23 out of 272	11%	9%
Chemical	15 out of 48	Not Covered	31%
Civil	19 out of 137	Not Covered	14%
Electrical	See Electricity and Magnetism Above		
Mechanical	13 out of 93	Not Covered	14%
Entomology	32 out of 80	70%	40%
Fish and Fisheries	9 out of 61	13%	13%
Forest Sciences (not including below)	29 out of 37	24%	31%
Lumber and Wood	16 out of 44	Not Covered	33%
Conservation	16 out of 63	Not Covered	24%
Genetics	13 out of 29	Not Covered	32%
Geology (not including below)	38 out of 167	23%	23%
Geography	19 out of 143	Not Covered	13%
Mines and Mineral Resources	19 out of 138	Not Covered	13%
Geophysics	24 out of 37	Not Covered	23%
Paleontology	7 out of 28	Not Covered	25%
Water and Water Supply	20 out of 87	Not Covered	13%
Metallurgy	12 out of 234	Not Covered	5%
Meteorology	13 out of 49	Not Covered	31%
Oceanography	3 out of 31	Not Covered	10%
Mathematics	33 out of 223	15%	24%

TABLE IV Hirsch V (con't)

Medicine	53 out of 1449	Not Covered	4%
Missiles and Space	8 out of 55	Not Covered	15%
Microbiology	8 out of 27	Not Covered	30%
Microscopy	3 out of 12	19%	25%
Nuclear Energy	14 out of 86	Not Covered	16%
Optics	9 out of 26	Not Covered	35%
Ornithology	7 out of 83	Not Covered	8%
Physics	48 out of 169	19%	28%
Physiology	8 out of 33	Not Covered	24%
Veterinary Science	11 out of 64	36%	17%
Zoology	26 out of 124	31%	21%

e. TABLE V

(From Deacon, A Guide To Science Reading)(3)

SUBJECT	TITLES AT ISBDD (1968)	PERCENT
Anatomy	1 out of 6	17%
Animal Ecology	12 out of 21	57%
Biochemistry	8 out of 13	62%
Biogeography	4 out of 9	44%
Biology	9 out of 27	33%
Botany	4 out of 21	19%
Chemistry (not including below)	2 out of 18	11%
History of Chemistry	3 out of 11	28%
Inorganic	2 out of 7	29%
Organic	0 out of 4	0%
Earth Sciences (not including below)	5 out of 11	45%
Crystallography	2 out of 3	67%
Geophysics	4 out of 9	44%
History of Geology	4 out of 4	100%
Meteorology	2 out of 15	13%
Mineralogy	0 out of 4	0%
Oceanography	3 out of 8	38%
Paleontology	2 out of 5	40%
Engineering (not including below)	5 out of 14	36%
Aeronautics and Astronautics	1 out of 27	4%
Electrical	1 out of 30	3%
Nuclear	0 out of 3	0%
Evolution	15 out of 31	51%
Genetics and Heredity	13 out of 28	46%
Geography and Exploration	2 out of 12	17%
Histology and Cytology	2 out of 7	29%
Mammals	8 out of 24	33%
Mathematics (not including below)	11 out of 48	23%
Algebra	9 out of 29	31%
Calculus	3 out of 10	30%
Computers	1 out of 14	7%
Geometry	4 out of 14	29%
History of Mathematics	10 out of 17	59%
Probability and Statistics	5 out of 12	41%
Trigonometry	0 out of 3	0%

TABLE V Impact (con't)

Medicine	4 out of 14	29%
Microbiology	5 out of 14	36%
Natural History and Conservation	11 out of 19	49%
Physiology	7 out of 24	29%
Physics (not including below)	7 out of 21	33%
Atomic and Nuclear Physics	9 out of 40	23%
Electricity and Magnetism	2 out of 16	13%
Heat	0 out of 4	0%
History of Physics	8 out of 26	30%
Mechanics	1 out of 12	8%
Optics	6 out of 12	50%
Relativity	5 out of 10	50%
Sound	3 out of 7	43%
Zoology (not including below)	6 out of 16	37%
Fish, Amphibians, Reptiles, Birds	6 out of 22	27%
Invertebrate	13 out of 19	68%
Vertebrate	4 out of 13	31%

f. TABLE VI

(Cliff, Books Library Lack)(3)

SECTION	LIBRARY HAS TITLES
Background and Orientation	13 out of 14
Algebra	33 out of 38
Analysis	57 out of 73
Applied Mathematics	25 out of 37
Geometry - Topology	28 out of 38
Logic, Foundations and Set Theory	20 out of 23
Probability - Statistics	10 out of 17
Number Theory	12 out of 16
Miscellaneous	18 out of 27

g. TABLE VII

(Voigt, Books For College Libraries)(3)

SUBJECT	NUMBER LISTED	LIBRARY HAS
General Science (Q)	288	139
Mathematics (QA)	388	324
Physics (QC)	336	245
Chemistry (QD)	349	201
Geology (QE)	231	123
Natural History and Biology (QH)	386	230
Botany (QK)	229	225
Zoology (QL)	336	196
Bacteriology (QR)	37	29
Agriculture (S)	310	132
Civil Engineering (TA-TH)	43	26
Mechanical Engineering (TJ)	40	26
Electrical Engineering (TK)	88	27
Mining, Metallurgical and Petroleum Engineering (TN)	43	18
Chemical Engineering (TP)	32	20

PART II. ANALYSIS OF THE COLLECTION BY SUBJECT AREAS

A. MATHEMATICS

1. Discussion. Mathematics is a foundation discipline. Not only is a knowledge of mathematics essential to an understanding of our physical world, but many other disciplines lean heavily upon mathematics. It is characteristic of the literature of mathematics that much of it is stable with most of the work done in the past still important today.

Idaho currently receives 53 serial titles in mathematics which represents a 265% increase over the 20 serial titles received nine years ago. This increase has left us with many incomplete runs. Some consideration will have to be given soon to filling in these backfiles. The Library has 10 of the 11 mathematics journals mentioned in Farber (12), the Mathematical Gazette is missing, and 19 of the first 25 titles in Brown (26). We have 53 of the 223 journal titles from the mathematics section of Ulrich's (2) or 23%. This represents a 6% increase over 1959 when only 19% of the titles were available in our Library. Idaho's weakness continues to be foreign journals, both in English and in other languages. If the graduate program in mathematics is to develop, more foreign titles will have to be acquired. A better perspective of this problem can be obtained by examining Library holdings for the serials indexed in Mathematical Reviews. Of the 883 titles covered by this indexing service the Library has only 169. The titles not available at Idaho were, for the most part, those published outside the United States.

The book collection is small but capable of meeting most of the Department's requirements at its present level of support. There are two important exceptions. First, the Library should have more of the collected works by important mathematicians such as A.F. Mobius, Fagnenlov, Goursat, Cantor, Laplace, Cauchy, etc.; and second, the need for general college textbooks continues to be pressing. The latter is brought out quite clearly when comparing Library holdings with the titles listed in Dawson (2). Of 136 titles the Library had only 43. Table V gives a further breakdown of mathematics holdings by special areas taken from Dawson. The Library fared somewhat better with the more specialized titles in the Basic library list prepared by CUPM for the Mathematical Association of America (3). This list, covering publications up to 1964, is intended to provide a beginning nucleus for a mathematics collection. The Library has 220 out of 303 titles included in the nine sections. Since many of these books are alternate selections, this would indicate that the Library has a fair collection of undergraduate mathematics books. A breakdown of holdings from the CUPM list is given in Table VI.

Both the American Mathematical Society and the Mathematical Association of America have well developed publishing programs. The Library receives all the "subject oriented" publications of the Mathematical Association of America and most of the publications from the American Mathematical Society. Many of the serial publications from these two Societies come to the Library on a standing order. There are, however, some deficiencies which should be noted. From the AMS we do not have: Chinese Mathematics-Acta; Lectures in Applied Mathematics given at the summer seminar held at the University of Colorado, 1960; Mathematics of the USSR-Izvestiia; Mathematics of the USSR-Sbornik; Proceedings of the Steklov Institute of Mathematics in the Academy of Sciences of the USSR; Transactions of the Moscow Mathematical Society (in English); and Selected Papers of Richard Von Mises, 2 vols. In addition, there are gaps in some of the titles which the Library currently receives (see recommendations section of this report

for a list of these). All of the current publications from the London Mathematical Society are coming to the Library with the exception of Russian Mathematical Surveys.

2. Recommendations - Mathematics.

a) That the Department review and make recommendations for the priority in which they wish the following gaps filled:

		LIBRARY HAS
1)	Acta Mathematica (Uppsala).	Vol. 108, 1962-
2)	American Journal of Mathematics.	Vol. 64, 1942-
3)	London Mathematical Society, Journal.	Vol. 40, 1965-
4)	Mathematics Magazine.	Vol. 37, 1964-
5)	Mathematical Society of Japan, Journal.	Vol. 17, 1965-
6)	Mathematische Annalen.	Vol. 1-132, 1869-1963; Vol. 158, 1965-
7)	Mathematische Zeitschrift.	Vol. 1-30; Vol. 71-80, 1959-1962/63; Vol. 87, 1964-
8)	Tohoku Mathematical Journal.	Vol. 14, 1966-
9)	SIAM Review.	Vol. 3, 1962-
10)	Journal für die Reine und Angewandte Mathematik.	Vol. 223, 1967-

b) That the following journals be reviewed by the Department and a priority assigned to each, indicating the order in which it should be purchased:

1) Paris. Universite. Institut Henri Poincare. Annales. Sections A and B
2) Annali di Matematica
3) Mathematical Gazette
4) Archiv der Mathematik
5) Commentarii Mathematici Helvetici
6) Calcutta Mathematical Society. Bulletin
7) Journal d'Analyse Mathematique
8) Bulletin des Sciences Mathematiques
9) Proceedings of the Royal Society of Edinburgh, Section A
10) Edinburgh Mathematical Society, Proceedings
11) Mathematical and Physical Sciences
12) Mathematika
13) Chinese Mathematics-Acta
14) Journal of Differential Geometry
15) Journal de Mathematiques Pures et Appliquees
16) Royal Society of Edinburgh. Proceedings. Section A: Math/Physics
17) Matematicheskii Sbornik

c) That the Department study the list of serials indexed in Mathematical Reviews and, in conjunction with their colleagues at WSU, make recommendations to strengthen regional resources.

d) That the Department consider a standing order for some of the more important publishers series:

1) Studies in Logic and the Foundations of Mathematics (North-Holland)
2) University Mathematical Texts (Interscience)
3) Athena Series-Selected Topics in Mathematics (Holt, Rinehart and Winston)
4) Ergebnisse der Mathematik und Ihrer Grenzgebiete (Springer-Verlag)

5) Die Grundlehren der Mathematischen Wissenschaften (Springer-Verlag)
6) Pure and Applied Mathematics (Academic)

a) In accordance with Departmental recommendations the Library complete its holdings of the following publications of the American Mathematical Society:

1) Translations Series 1 and Series 11
2) Selected Translations in Mathematical Statistics and Probability
3) Proceedings of Symposia in Pure Mathematics
4) Colloquium Publications
5) Mathematical Surveys

8. PHYSICS

1. Discussion. Physics is a discipline characterized by rapid change. For our purposes it includes the related areas of astrophysics, heat, light, sound, electricity, mechanics, small particles, and magnetism. In physics, as in most of the other sciences, the need for currency is of great consequence. This makes the periodical literature of primary importance. A small core of journals report a major share of the significant work. This group is dominated by the Physical Review, Journal of Chemical Physics, Nuovo Cimento, with four or five other titles.

The Library currently receives 93 serials classified in physics (QC), in contrast to the 23 physics journals we were receiving in 1958, or an increase of over 400%. Some of this increase is the result of reclassification, but there has been substantial growth in this area. From the sections in Ulrich's (2) covering physics, nuclear energy, and optics, the Library has 71 out of 221 journals. The missing titles are, for the most part, foreign journals or journals published in English covering fields which have only recently come into prominence - cryogenics, vacuum technology, solid state physics, dielectrics, and the laser/maser. The Library now receives all of the titles mentioned by Farber (13), and 23 out of the first 25 most-cited physics journals mentioned in Brown (26). Certainly it isn't necessary for this Library to acquire every title noted in these lists. However, some of these journals do merit careful consideration by the Department. The reader should consult the section of this report giving recommendations for a list of prospective titles.

The American Institute of Physics has been putting a major effort into documentation projects as well as into increasing the quality of the professional literature in physics. Of the 21 journals sponsored and/or published by AIP or by its member societies, the Library has 19, lacking the Program of the Acoustical Society of America, and the Physics Teacher. Of the 11 Soviet journals whose translation into English is sponsored by AIP the Library has only 4, a poor showing indeed.

The combined Institute of Physics and the Physical Society in Great Britain publish three scientific journals and an annual review. With the exception of the Journal of Scientific Instruments the Library has a complete file for each of these. The Library does not receive the new (1968) journal Physics Education, nor does it have many of the monographic publications sponsored by these two professional groups. The Monographs for Students Series, Physics in Industry

Series, and Proceedings of Conferences are all incomplete.

Coverage by physics abstracting and indexing services is adequate for the Library's present needs. There is a complete file of Physics Abstracts and Chemical Abstracts which will serve most of the requirements of our faculty. However, as the physics program develops the Library should consider subscribing to a current awareness service and to some of the more specialized indexing services such as Solid State Abstracts together with parts of the Bulletin Signalétique.

In 1964, the AIP issued a pamphlet by Hamann and Silberman (7) in which the authors ranked journals and countries in the order of their contributions to the 1961 volume of Physics Abstracts. From the list of journals having the greatest number of abstracts in PA the Library currently receives 19 of the first 20. The two not at Idaho were Russian language journals which the Library has in English translation.

A comparison of monographic holdings with the physics titles listed in Deason (2) revealed that many of the basic works by authors such as Gamow, Gutenberg, Planck, Brillouin, and da Costa Andrade were missing. Out of the 148 titles mentioned by Deason the Library has 41. The reader should consult Tables V and VII for a more detailed breakdown of physics holdings.

In 1966 the AIP published a revised Check List of Books and Periodicals for an Undergraduate Physics Library (6). This is a list of books and journals selected by seven colleges and one university for their libraries. It constitutes a well chosen nucleus for any physics library. The emphasis is on the requirements for a basic undergraduate physics library with little attempt at coverage of the specialized research areas. The list contains 2,020 monographic and 66 journal titles. The Library was able to supply 1,833 of the books and 37 of the journals. Missing journal titles from this list have been included under the recommendations following this report and are marked AIP. Many of the classic monographs are missing and for others our Library has only the older editions.

The Library did not fare much better in its holdings of titles from the Voigt (8) list with 263 out of 536 titles listed. After studying the Deason (2), Voigt (8), and AIP (6) check lists, it would seem that not enough attention is being given to acquiring general (i.e. basic to intermediate) books which supply the background readings for undergraduate physics courses, and to the acquisition of new editions.

Finally, in order to round out the picture, the Library reviewed its ability to satisfy requests for material from the physics faculty by counting items listed in the terminal bibliographies from the 1963 volume of Reports on Progress in Physics. This volume is a fair cross section of the current work being done in physics. It includes articles on neutron physics, photoconductivity, crystal lattices, solid-state polymerization, etc. Of the approximately 1,334 cited items (books, journals, reports, etc.), the Library was able to supply 1,100. A large share of the items which could not be supplied were backfiles for journals currently received by the Library. This would indicate a need for depth in our holdings through the purchase of additional supporting runs of journals. This is particularly critical for journals not available in the Pacific Northwest. Some attention should also be given to acquiring more of the published proceedings, symposia, etc., from meetings of professional groups. These constitute a large and very important segment of the physics literature.

The American Journal of Physics publishes an irregular interwoven a series of resource letters "... intended to guide college physicists to some of the literature and other teaching aids that may help them improve course contents in specified fields of physics..." While it is beyond the scope of this survey to incorporate these resource letters into this report, the reader should be aware of the existence of these lists of recommended materials on such specialized topics as angular momentum, the evolution of energy concepts, nuclear magnetic resonance, etc.

2. Recommendations - Physics

a) That consideration be given to strengthening physics holdings by completing or filling in selected backfiles for the following journals.

1) Applied Spectroscopy, Vol. 1-14, 17-18, 21, 1966-
2) Australian Physics Notes, Vol. 10, 1966-
3) Journal of Chemical Physics, Parts A, B and C, Vol. 21, 1967-
4) Journal of Scientific Instruments, Vol. 17, 1966-
5) Journal of Vacuum Science and Technology, Vol. 4, 1967-
6) Nuclear Instruments, Vol. 11, 1966-
7) Nuclear Physics, Vol. 78, 1966-
8) Optik (Jena), Vol. 11, 1955-
9) Physica, Vol. 22, 1956-
10) Proceedings of the Cambridge Philosophical Society: Series: mathematical & Physical Sciences, Vol. 54, 1958-
11) Progress of Theoretical Physics, Vol. 21, 1959-
12) Review of Scientific, Vol. 40, 1969-
13) Solid State Electronics, Vol. 11, 1967-
14) Soviet Physics - Solid State, Vol. 7, 1965-
15) Technik, Vol. 17, 1962-
16) Uspekhi Fizicheskikh Nauk, Vol. 5, 1967-

b) That the following titles not now in the library be ordered by the Department and recommendations made to the Library relative to which new subscriptions are needed and in what priority they should be acquired:

1) Academy of Sciences of the USSR, Bulletin (formerly) Atomic Physics and Cosmic Physics (cut)
2) Acta Physica
3) Astronautica and Space Science
4) Comptes de Physique
5) Chinese Journal of Physics (cut)
6) Communications in Mathematical Physics
7) Contemporary Physics: A Journal of Interdisciplinary & Applied (cut)
8) Cryogenics (Quarterly)
9) Czechoslovak Journal of Physics
10) Diffraction (Quarterly)
11) Fortschritte der Physik
12) Indian Journal of Physics
13) Japanese Physics
14) Lettere al Nuovo Cimento, Monthly
15) Progress of Theoretical Physics Supplement
16) Quarterly Journal of Pure and Applied Mathematics
17) Soviet Physics
18) Journal of Applied Spectroscopy

(d) Journal of Computational Physics
(e) Journal of the Mathematical and Physical Society
(f) Theoretical Science and Technology
(g) Physical Mathematics
(h) Physical Review and Engineering
(i) Physical Review (Letters)
(j) Physical Mathematics and Methods (xiii)
(k) Physical Data
(l) Physical Review Series
(m) Physics
(n) Physical Review (xiii)
(o) Progress of the Mathematical Society of America
(p) Solid State Electronics (xiii)
(q) Physical Chemistry of Physical Physics (xiii)
(r) Physical Physics - Fundamentals
(s) Physical Physics - Mathematical Physics (xiii)
(t) Physical Science
(u) Mathematics
(v) Mathematics for Mathematics (xiii)

a) That the Department consider the need for a revised mathematical model of Physical Physics published by the Institution of Electrical Engineers.

b) That the book collections be reviewed and more copies of general interest be acquired as well as new editions for those out of the shelves.

c) That more attention be given to acquiring the published proceedings of important meetings, symposia, colloquia, etc.

d) That the Department advise the publications issued or sponsored by the Institute of Physics and the Physical Society with a view to the acquisition of those which appear not already to subscribe. For example, the Institute of Physics and Physical Society Conference Series.

e) That consideration be given to acquiring more publications dealing with matters of Computer Programming in Physics and the Physical Review in Natural Philosophy.

f) That all publications from the International Atomic Energy Agency be reviewed especially the numerous Atomic Energy Series and Physics Series.

5. CONCLUSION

5.1 Discussion. The library is well equipped to support the Physics Department in the undergraduate courses at (i) Fundamental Chemistry, (ii) Working on a research Physicist for other programs at the moment, and (iii) Undergraduate level teaching. Most weaknesses there are exist at the graduate level. However, the basic texts are available and the present level of support to undergraduates provided at the programs are adequate.

The library currently receives 150 periods classified in the Chemistry (xiv) series. This compares quite favourably with the 90 periods in Chemistry and Chemical Technology which we received in 1970, all of the basic journals are present and most have complete holdings. However, there are some deficiencies in our holdings of foreign journals. These have been noted on the list of

also possible. In the future there will be a greater need for Russian publications, although there seems to be no immediate demand beyond what we already have for those publications either in the original or English language edition.

The library receives and has on file all the newsprint and serial publications of the American Chemical Society with the exception of the National Formulary, we have all available (except the Russian journals in translation) and most of the monographic publications from the Chemical Society of Great Britain. The library also receives the major journals issued by the national chemical societies in Germany, Italy, Japan (the Bulletin only), France, Belgium, Switzerland, Canada, etc.

The library receives the journal Chemistry in Britain published by the Royal Institute of Chemistry, but has none of the previous issues, Newsletter or Service from the Institute. We need the library have the Journal of the Royal Institute of Chemistry which merged with the Proceedings of the Chemical Society in 1954. The interest in obtaining coverage in the holdings of the publications from the Chemical Society, London, is especially needed all parts of the Journal, Chemical Society, Perkin, Chemical Communications, Quarterly Reviews, and the Annual Reports on the Progress of Chemistry. However, an systematic attempt is being made to collect the Faraday Transactions section of the Society. The library has only numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40,

many review serials in the chemistry section of the Library, they are typical of our ability to supply material and indicate fair holdings.

One type of publication in which we are weak is the multivolume Treatise or Handbuch. While we do have complete holdings of such important sets as Beilstein; Houben-Weyl; Elsevier; Sneed, Maynard and Brasted; Kolthoff; and Weissberger, we lack many other important series. We do not have Fresenius and G. Jander, Handbuch der Analytischen Chemie, nor does the Library have more than a dozen of the 190 plus sections of Gmelin. The Department may also wish to consider purchasing new editions of Heilbron and Rodd since they are in English and somewhat easier to use than Beilstein.

2. Recommendations - Chemistry

a) That the Department consider purchasing the new editions of either Heilbron Dictionary of Organic Compounds, 4th ed. 1965 (Library has 1953 edition) or Rodd's Chemistry of Carbon Compounds, 2nd ed., 1964- (Library has 1951 edition).

b) That consideration be given to placing standing order for publishers series such as:

1) Addison-Wesley Series In Chemistry
2) McGraw-Hill Series In Advanced Chemistry
3) Pergamon Press International Encyclopedia of Physical Chemistry and Chemical Physics
4) Pergamon Press International Series of Monographs on Organic Chemistry
5) the Special Publication Series from the Chemical Society

c) That the Department recommend the priority in which it wishes the following gaps filled:

		LIBRARY HAS
1)	Acta Crystallographica.	Vol. 1-6, 12, 1939-
2)	Advances in Colloid Science.	Vol. 1, 3
3)	Advances in Spectroscopy.	Vol. 1, 2, only
4)	Applied Spectroscopy.	Vol. 20, 1966-
5)	Arkiv för Kemi.	Vol. 23, 1965-
6)	Chemical Society of Japan. Bulletin.	Vol. 22, 1949-
7)	Collection of Czechoslovak Chemical Communications.	Vol. 24, 1959-
8)	Gazzetta Chimica Italiana.	Vol. 89, 1959-
9)	Indian Chemical Society. Journal.	Vol. 34, 1957-
10)	Journal of Catalysis.	Vol. 3, 1964-
11)	Journal of Organometallic Chemistry.	Vol. 5, 1966-
12)	Monatshefte für Chemie.	Vol. 1-74, 90, 93, (1962)-
13)	Suomen Kemistilehti.	Vol. 35, 1962-
14)	Talanta.	Vol. 11, 1964-

d) That the following titles not now in the Library be reviewed by the Department and recommendations made to the Library relative to which new subscriptions are needed and in what priority:

1) Advances in Colloid and Interface Science
2) Advances in Quantum Chemistry
3) Annales de Chemie

4) Petroleum Geologists Bulletin (Bimonthly)
5) Polish Journal of Chemistry (Pergamon)
6) Inorganic Chemica Acta
7) Korean Journal of Chemistry
8) Journal of Analytical Chemistry, USSR (translation of Russian publication)
9) Radiochemistry Russia
10) Progress in Reaction Kinetics (Pergamon)
11) Progress in Solid State Chemistry (Pergamon)
12) Progress in Stereochemistry
13) Radiochemica Acta
14) Russian Chemical Reviews
15) Russian Journal of Inorganic Chemistry (translation of Russian Inorganic Chemical Society)
16) Russian Journal of Physical Chemistry (translation of Russian Physical Chemical Society)
17) Theoretica Chimica Acta

b. Earth sciences

1. Discussion. The College of Mines has suffered for many years from an acute lack of funds affecting all Departments within the College. Therefore, first priority should be given to the task of recovering the ground lost over the years when there were no funds available for books or journals. Such a recovery program was initiated two years ago and must continue if the College is to have the necessary library resources to support the needs of the curriculum and staff research. Indeed, some kind of special library appropriations will be required just to purchase the necessary backfiles to support the current research program within the College.

In addition to the traditional fields of geology, geophysics, mineralogy, and paleontology, this section will totally review library holdings in the various areas related to the earth sciences such as metallurgy, meteorology, geophysics, geochemistry, hydrology, volcanology, seismology, mineralogy, etc. Because of the curricular patterns within the College, it will also cover mining, metallurgical, petroleum, and geological engineering.

Unless there is a major shift in the curriculum or in the research interests within the College, the present level of support is sufficient for such fields as mineralogy, geophysics, metallurgy, meteorology, volcanology, petrology, and paleontology. The greatest needs are presently in the areas of mining engineering, geography, geochemistry, and hydrology with some attention given to volcanology. Hydrology is an area of special importance to Idaho because of the state's growing interest in her water resources.

The Library has the basic journals and a possible book collection for mineralogy, meteorology, metallurgy, geophysics, volcanology, petrology, and paleontology, although the holdings for journals in paleontology have only since most of them started coming to Idaho within the past three years. Some additional work will need to be added as the metallurgy program develops, particularly in the areas of crystallography and corrosion. The number of journals currently received in each of these disciplines is as follows: mineralogy 5, geophysics 12, volcanology 1, petrology 8, paleontology 7, volcanology 6, seismology 6, meteorology (UI 80) 10, metallurgy (UI) 9, geochemistry 6, hydrology 10, geography (G) 16, mining and petroleum engineering (UI) 12, and the appropriate basic

science (all GE) 81. It is possible to obtain some perspective on these holdings by comparing what the library has with the number of titles listed for each discipline in Ulrich's (2) as follows: earth sciences, 38 out of 147; meteorology, 13 out of 43; water and water supply, 18 out of 87; metallurgy, 10 out of 231; geophysics, 14 out of 37; mines and mineral resources, 19 out of 130; paleontology, 7 out of 23; and geography, 19 out of 141. A special list of current geographical serials in English was prepared by Harris (10) in 1964. The library can supply only 27 of the 117 titles listed. This is not a strong showing and emphasizes the need for more serials in all areas, particularly for serials published outside the U.S.

It is apparent from the above figures that much work remains to be done by the library and the College in developing library resources. This is especially true of foreign titles, including those in English as well as those in other languages. In addition, more consideration must be given to acquiring enough depth in the present journal files to permit thorough retrospective literature searches. In considering titles to be added to the collection, it will be especially important to obtain more of the publications from the national and professional societies as well as from appropriate governmental agencies at the national, provincial, or state level.

Some years ago (1962) the Engineer's Council for Professional Development prepared a Selected Bibliography of Engineering Subjects for Metallurgical, Mining and Petroleum Engineering (3). From this list, the library can supply 128 out of 178 titles. Although this list is now seriously dated, much of the material is basic and should be available on this campus. More information on library holdings in the earth sciences can be obtained from Tables V and VII for Deason (3) and Voigt (8).

Another measure of a library's completeness is the ability to supply material covered by the standard indexing/abstracting services for a particular discipline. In this connection the library ranks as follows: From the Publications of North American Geology the library receives 113 of the 124 titles indexed, from the Bibliography and Index of Geology Exclusive of North America the library receives 84 out of 134 serials, a poor showing indeed. Since the library does not receive Geographical Abstracts published by the Department of Geography, London School of Economics, it was impossible to compare our holdings with those covered by this service.

Publications of international congresses as well as those issued or sponsored by the professional societies are an especially important segment of the earth science literature. Such special considerations are publications from the following: International Geographical Congress (the 21st was held in 1964, Library has only the 17th), International Geological Congress (Library has 11th-21st), Geological Society of America, American Geological Institute, American Mineralogical Society, American Society for Metals, all member groups of the American Institute of Mining, Metallurgical, and Petroleum Engineers, Societe Geologique de France, Deutsche Geologische Gesellschaft, Australasian Institute of Mining and Metallurgy, South African Institution of Mining and Metallurgy, Institute of Metals, Canadian Institute of Mining and Metallurgy, American Association of Petroleum Geologists, American Geographical Society, Association of American Geographers, etc.

The library has all of the publications of the Geological Society of America with the exception of Engineering Geology Case Histories for which only numbers 2-5 are available on loan. The library is now going on standing on the

holdings of publications from the American Geological Institute, lacking all of the translated monographs and the English translation of the Earth Science section from Izbiata. Nor does the library contain the International Field Institute Guidebooks for Brazil and the Parts Basin, the book on the Chain Silicates by S.E. Appleman, and the Geological Data Sheets, all of which are published by the A.G.I.

The American Meteorological Society has an equally strong publishing program. The library has current subscriptions to each of the four periodicals and to the abstracting service published by the AMS. However, the library has complete files for only the abstracting service and the Journal of Applied Meteorology. Of the 8 books, historical monographs, and conference proceedings published by the Society, the library has four. We need one of the translations and could use their cumulative list of translations. The library has a standing order for all Meteorological Monographs and now owns all parts which are in print. The most-popular journal Weatherwise published a list of English language books and journals in meteorology in 1963 (24). From this list the library has 12 of the 17 periodicals and 47 of the 124 books listed. Missing from our collection were the popular non-fiction read by the educated layman and the elementary texts. Our holdings were much stronger in the "Advanced Texts" and "Special Subject" portions of this list.

The library has a well stocked collection of U.S. Government documents and is equipped to answer requests for most of the publications from the U.S. Geological Survey and the U.S. Bureau of Mines. The only exceptions to this are those few items from the Bureau or the Survey which do not come on depository items. Here the only significant gap exists in U.S.G.S. Circulars for which the library has large and irregular gaps.

3. Recommendations - Earth Sciences

a) That a systematic effort to exchange professional publications with other national, local, and regional groups be initiated in the library with the help of College of Mines personnel. It is anticipated that such a program could offer publications from the College on an exchange basis with the permission of the Dean and with all material coming directly to the library. This program could well begin by exploring exchange agreements with the following: all states bordering Idaho especially Oregon Department of Geology and Mineral Industries, the California Division of Mines (Bulletin, Reports, Mineral Information Service and Special Reports), Canadian Department of Mines and Technical Surveys (Mineral Reports, Mineral Information Bulletin, Research Reports, Technical Bulletin and Water Survey Reports), Canadian Geological Survey (Bulletin, Economic Geology Series), etc.

b) That more attention be given to acquiring the professional monographic publications from the following institutions, associations, and societies on standing order:

1) American Association of Petroleum Geologists. Library has Memoirs 1 and 2 only.
2) Association of American Geographers, Monograph Series. Library has numbers 1, 2, 4.
3) Canadian Institute of Mining and Metallurgy, Special Volumes. Library has number 8 only.
4) Chicago, University, Department of Geography. Library has numbers 22, 28, 30, 35, 37, 40, 41, 44-47, 49-108, and no date.

5) Geological Society of America, Engineering Geology Case Histories. Library has numbers 2-5 (1964).
6) Institute of Metals (Great Britain) Monograph and Report Series. Library has numbers 1, 3, 7, 25.
7) Land Studies in Geography. Library has Series A, nothing; Series B, numbers 24, 25; and Series C, numbers 1 and 2.
8) Metallurgical Society (AIME), Conference Volumes. Library has number 27 only, the Sorby Centennial Symposium.
9) Society of Economic Paleontologists and Mineralogists, Special Publication. Library has numbers 7, 12, 13, 15.

c) That the staff within the College of Mines review the following list and indicate to the Library which gaps it wishes filled and in what priority:

	Library Use
1) Australian Institute of Mining and Metallurgy, Proceedings, No. 222, 1967-	
2) Beiträge zur Mineralogie und Petrographie, Vol. 11, 1964-	
3) Bulletin de la Société Géologique de France, 1956-1957, 1960-	
4) Bulletin of Canadian Petroleum Geology, Vol. 13, 1965-	
5) Canadian Institute of Mining and Metallurgy, Transactions, Vol. 59-60 (1956-1957) and Vol. 68, 1965-	
6) Canadian Mineralogist, Vol. 7, 1962-	
7) Chemie der Erde, Vol. 24, 1965-	
8) Chroniques des Mines et de la Recherche Minière, Vol. 33, no. 314, 1967-	
9) Clay Minerals Bulletin, Vol. 5 (no. 27), 1962-	
10) Earth Science, Vol. 18, 1965-	
11) Geological Association of Canada, Proceedings, Vol. 9-12, 16, 1962-	
12) Geological Society of Australia, Journal, Vol. 14, 1967-	
13) Geological Society of Japan, Journal, Vol. 7, 1962-	
14) Geological Society of South Africa, Transactions, Many gaps exist filling.	
15) Geologie en Mijnbouw, Vol. 42 and 44, 1963-	
16) Institution of Mining & Metallurgy, London, Transactions, Vol. 8-23, 36-38, 59-73, 76 (1964)-	
17) International Mineral Processing Congress, Indexes 3 (1960), 4 (1963), 7 (1964)	
18) Journal of the Iowa Academy Science, Vol. 5, 1963-	
19) Methods in Geochemistry and Geophysics, Indexes 3 and 4,	
20) Micropaleontology, Vol. 11, 1965-	
21) Mineralogical Magazine, Vol. 31, 1958-	
22) Ocean Geological Oceanography, Vol. 15, 1963-	
23) Palaeontology, Vol. 8, 1965-	
24) Palaeontographica Abteilung A, Vol. 111, 1957-	
25) Palaeontology, Vol. 14, 1965-	
26) Paläontologie, Vol. 9, 1965-	
27) Publications, Iowa Academy of Science, Vol. 70, 1963-	
28) Publications des Universités Occidentales Associées, Vol. 114, 1965-	

d) That the following books not now in the Library be reviewed by the College and recommendations made to the Library relative to which additions are needed and in what priority:

1) Academy of Sciences of the USSR. Bulletin (Izvestiya). Atmospheric and Oceanic Physics Series. English edition.
2) Academy of Sciences of the USSR. Bulletin. Earth Sciences Sections. English edition.
3) Acta Geologica
4) Acta Zoologica
5) Acta Zoologica et Pathologica Antverpiensia
6) Association de Geographes Francais. Bulletin
7) Atmosphere
8) Australasian Institute of Mining and Metallurgy. Proceedings
9) Australian Geographer
10) Australian Geographical Studies
11) Australian Institute of Metals. Journal
12) British Ceramic Society. Journal. Proceedings. & Transactions
13) British Museum (Natural History) Bulletin. Geology
14) Bulletin of American Paleontology
15) Bulletin of Canadian Petroleum Geology
16) Bureau de Recherches Geologiques et Minieres. Bulletin
17) Canadian Geophysical Bulletin. Annual
18) Canadian Geophysical Journal
19) Chemical Geology
20) Coal Mining Institute of America. Proceedings
21) Colliery Engineering (London)
22) Conservation, Protection and Control
23) Conference Foundation for Forest-Forest Research. Contributions
24) Earth and Planetary Science Letters
25) Ecologia Mediterranea
26) Erdkunde; Archiv fur wissenschaftliche Geographie
27) Fortschritte der Mineralogie
28) Geographical Publications
29) Geological Society of India. Bulletin
30) Geological, Mining and Metallurgical Society of India. Bulletin
31) Geologiya i Geofizika. Proceedings
32) Indian Geographical Journal
33) Industrialization and Technology
34) International Journal. Translations from the Russian sponsored by AGI

33) Sedimentary Geology
34) Societe Belge de Geologie, de Paleontologie et d'Hydrologie. Bulletin
35) Societe Geologique de Belgique. Annales
36) South African Mining and Engineering Journal
37) Soviet Mining Science
38) Tectonophysics
39) Tschermaks Mineralogische und Petrographische Mitteilungen
40) Zeitschrift fur angewandte Geologie
41) Zeitschrift fur Geophysik
42) Zeitschrift fur Lagerstattenkunde

e) That the faculty within the College of Mines be asked to review the missing books as listed in Voigt (9) and Dawson (3) in order to submit titles they wish to purchase.

f) That consideration be given to the acquisition of selected publishers series on standing order. The Library now receives on standing order, Developments in Sedimentology (American Elsevier), and International Series of Monographs in Earth Sciences (Macmillan). Consideration should be given to adding to this list the Foundations of Earth Sciences Series (Prentice-Hall), International Geophysics Series (Academic), with Minerals, Rocks, and Inorganic Materials (Springer-Verlag) plus any additional series the staff in the College may indicate.

4. BIOLOGICAL SCIENCES (PLANT SCIENCE)

1. Discussion. The Library collection for botany (QK) is extremely well prepared to meet the demands currently being made upon it by faculty and students. In addition to supporting the curricular and research needs of the staff in the Department of Biological Sciences, Library holdings in the plant sciences are important resources for many other disciplines on our campus. As the research interests of the faculty grow, especially those within the Department, the collection will have to follow suit. Primarily, this means the emerging of special fields of excellence within the Library collection, an increase in the number and type of foreign publications, more foreign language publications, and the acquisition of more ephemeral or active use types of Library material.

The Library has made considerable progress in recent years, especially in the areas of plant physiology and ecology. Many new journals have been added in a variety of subjects. The result will soon evidence of this in the large number of journals for which our holdings begin in the early 1960's. Most of the basic journals are available at Duke with complete holdings, for example, American Journal of Botany, Botanical Gazette, etc. The Library currently receives 76 journals in the plant sciences, including journals in botany, plant physiology, ecology, phytopathology, etc., and can supply 34 of the first 50 most cited serials listed in Item (10). The only title mentioned in Item (10) not available at Duke, Zeitschrift fur Pflanzenphysiologie Botanik, has caused and there is some question about the wisdom of having a set at both Duke and UNC.

Of the serial titles listed under botany in Hinds's (5) the Library can supply 67 out of 100. The more important missing titles have been mentioned with the recommendations section of this report. The Library faces somewhat better in its ability to supply these materials in monograph bibliographies. Here the UNC volume of Literature in Botanical Research the Library can also supply 438 of the 670 items mentioned. The number surrounding that which emerged

from this survey was the frequency with which journals normally thought of as being outside the field of botany are cited in the botanical literature. This is much more than a matter of one or two references. It involves the frequent and consistent use of journals from other fields to support certain types of botanical research. These include such journals as the Physical Review, the Journal of Chemical Physics, Journal of the American Chemical Society, etc. This same observation also applies to the so-called "general" science journals which attempt to publish material from all fields, i.e., Nature (London), Science, Naturwissenschaften, Proceedings of the National Academy of Science (Washington), etc. These also appeared with consistent regularity in the terminal bibliographies and therefore should be available in complete or near complete runs at Duke. Indeed, botany suffers as much as any of the other disciplines from a lack of material in supporting disciplines. In addition to the examples given above, some support will have to be given to the auxiliary areas of molecular biology and genetics.

As far as the monographs were concerned, the library has the basic reference tools mentioned by Dorn (16) and many that he did not mention. With the exception of regional floras covering areas outside the U.S., the library is well prepared to meet the demands made upon it for general botany sources, having a high percentage of the titles listed in both Voigt (3) and Dorn (2). Some notable exceptions were Gordon E. Pegg's book, the Herbicides of Algae (1959), David H. Dorian book, Intermediate Herbicides in Plants (1961), and Benjamin Dorner's Plants and the Blackness of Pacific Peoples & Economics (1963).

On the basis of the evidence submitted above it would appear that the library is well equipped to fill the needs for so-call "standard" journals and texts, and ready to begin specialization, i.e., the collection of research materials beyond the basic publications necessary for work at the undergraduate or master's levels. In following such a course it is absolutely essential that the library have the full cooperation and guidance of the department.

5. Recommendations - Botanical Sciences

a) That consideration be given to acquiring all publications from the International Congresses of Botany. Sections 1-7, and 8 (1950-1959) have been registered and are available at this writing. The library has numbers 6 (1950), 8 (1959), 7 (1950), and 9 (1959).

b) That the following titles not now in the library be ordered by the department and recommendations made to the library relative to which new subscriptions are needed and in what priority:

1) Aquarium Journal
2) Botanical Magazine (Tokyo)
3) Botanical Review
4) Journal of Botanical Taxonomy
5) Taxon, Botanical Annals
6) Plants, Experimental Methods for Botanical Taxonomy and Phytochemistry
7) Systematic Zoology
8) Ecology
9) American Naturalist
10) Physiology
11) Journal of Biochemical Genetics
12) Chronica Botanica or Taxon, Planta (Botany)

(3) [illegible] Research
(4) [illegible] Journal of Botany
(5) [illegible] Botanical Research
(6) [illegible] Flora
(7) [illegible]
(8) [illegible] Revista de Biologia de Bulgaria, [illegible]
(9) [illegible] [illegible]
(10) [illegible] [illegible]

c) That the Department recommend to the Library the publication by which it wishes the following gaps closed:

(1) [illegible] Vol., [illegible] (1963).
(2) [illegible] Vol., [illegible] (1963).
(3) [illegible] Vol., [illegible] (1963).
(4) [illegible] Vol., [illegible] (1963).
(5) [illegible] [illegible], Vol., [illegible] (1963).
(6) [illegible] Vol., [illegible] (1963).
(7) [illegible] Vol., [illegible] (1963).
(8) [illegible] Vol., [illegible] (1963).
(9) [illegible] Vol., [illegible] (1963).
(10) [illegible] Vol., [illegible] (1963).
(11) [illegible] Vol., [illegible] (1963).
(12) [illegible] Vol., [illegible] (1963).
(13) [illegible] Vol., [illegible] (1963).
(14) [illegible] [illegible] Vol., [illegible] (1963).
(15) [illegible] Vol., [illegible] (1963).
(16) [illegible] Vol., [illegible] (1963).
(17) [illegible] Vol., [illegible] (1963).
(18) [illegible] Vol., [illegible] (1963).
(19) [illegible] Vol., [illegible] (1963).
(20) [illegible] Vol., [illegible] (1963).
(21) [illegible] Vol., [illegible] (1963).
(22) [illegible] Vol., [illegible] (1963).
(23) [illegible] Vol., [illegible] (1963).

5. [illegible]

a. Discussion. With the possible exception of a few specialized areas, one of which is mathematics, library holdings in the geological sciences are such as would properly represent an asset the assets of the department. Researchers in discussed elsewhere in this report and will not be a part of this section. Library holdings in the discussed here cover the geological and biological sciences with the exception of the given titles which also serve a service to chemists.

Geology (G) is a fundamental discipline and has one of the smallest library collections. This part of the library is especially unusual because it serves as a resource area for an area other disciplines. Library holdings in the general geology in several volumes (G) service are not much better and both sections badly need upgrading. The University of [illegible] receives 41 serial publications classified as geology (G) and 118 classified as general geology (GN). Even these appear to be a fairly substantial representative

[illegible] one considers that [illegible]'s (0) [illegible] (1) [illegible], (2) [illegible], (3) [illegible], (4) [illegible], (5) [illegible], (6) [illegible], (7) [illegible] and (8) [illegible]. If [illegible] is zoology, (1) is [illegible], (2) is [illegible], (3) is [illegible], (4) is [illegible], (5) is [illegible], (6) is [illegible], (7) is [illegible], and (8) is [illegible]. The reader should realize that [illegible] science [illegible] to [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

6) Acta Zoologica (Sweden)
7) [illegible]
8) [illegible]
9) Annales des Sciences Naturelles. Zoologie et Biologie Animale
10) [illegible]
11) [illegible]
12) Archives de Zoologie Experimentale et Generale
13) [illegible]
14) [illegible] Comparata Biologica
15) [illegible], Journal
16) [illegible] Journal
17) [illegible]
18) [illegible]
19) [illegible] de Zoologia
20) [illegible]
21) [illegible]
22) [illegible]
23) [illegible]
24) [illegible]
25) [illegible]
26) [illegible]
27) [illegible] (Chelsea Publishing Company)
28) [illegible] Physiologie des Menschen und der Tiere
29) [illegible]
30) [illegible]
31) [illegible]
32) [illegible] und Physiologie und [illegible]
33) [illegible] A Journal of Developmental Biology (Springer)
34) Yale Journal of Biology and Medicine
35) [illegible]
36) [illegible]
37) [illegible]
38) [illegible] und Okologie der Tiere
39) [illegible]
40) [illegible]
41) [illegible] Abt. A
42) [illegible]
43) [illegible]
44) [illegible]

4) That the Department recommend to the Library the order in which it obtains the following gap fills:

PRIORITY ONE

1) American Museum of Natural History. Bulletin. A few missing numbers
2) Animal Behaviour. Vol. 10, 1962-
3) Annals & Magazine of Natural History. Ser. 13, Vol. 1-8, [illegible]
4) Annals of Tropical Medicine and Parasitology. Vol. 52, 1958-
5) [illegible] [illegible] 1962-
6) [illegible] Vol. [illegible] 1962-
7) [illegible] Vol. 27-60, (1937-1940), Vol. 78, [illegible]

8) Cytogenetics. Vol. 3, 1964-
9) Developmental Biology. Vol. 4, 1962-
10) Growth. Vol. 29, 1965-
11) Harvard University. Bulletin of the Museum of Comparative Zoology. Vol. 130, 1962-
12) Heredity. Vol. 20, 1965-
13) Indian Journal of Experimental Biology. Vol. 3, 1965-
14) Journal of Anatomy. Vol. 88, 1954-
15) Journal of Applied Ecology. Vol. 4, 1967-
16) Journal of Experimental Biology. Vol. 32, 1959-
17) Journal of Molecular Biology. Vol. 8, 1964-
18) Journal of Ultrastructure Research. Vol. 7, 1962-
19) Life Sciences. Vol. 6, 1967-
20) Marine Biological Association of the United Kingdom. Journal. Vol. 42, 1962-
21) New Zealand Ecological Society. Proceedings. No. 14, 1967-
22) Royal Society of London. Proceedings. Series B. Biological Sciences. Vol. 137, 1950-
23) Societe de Biologie. Comptes Rendus des Seances. Vol. 157, 1963-
24) Terre et Vie. Vol. 114, 1967-
25) Toronto. Royal Ontario Museum. Life Sciences Division. Contributions. Library has some numbers, but no current subscription
26) Zeitschrift für Saugetierkunde. Vol. 27, 1962-
27) Zoologica. Vol. 33, 1948-
28) Zoological Society of London. Proceedings. Vol. 130, 1958-
29) Zoologischer Anzeiger. Vol. 170, 1963-

a) The indexing/abstracting services should be completed with all missing numbers in the Zoological Record and the biology, botany, and zoology volumes of the International Catalog of Scientific Literature purchased for Library.

G. ENTOMOLOGY

1. Discussion. The entomology collection is one of the strongest, best developed and, it should be stated, most heavily used in the Library. The Department is active and research oriented. Both the College of Agriculture and the College of Forestry are working in this area, and there has been some interest in developing Idaho's collection as a regional resource in entomology. The literature of entomology is large, stable, and dependent upon many related areas such as genetics, ecology, zoology, chemistry, etc. The early literature remains important and does not become dated to the extent that occurs in the engineering or physical sciences.

This Library currently receives 73 serial titles in entomology, an increase of 280% over the 26 titles we received in 1959. However, a few of these titles have large gaps which need to be filled. If the graduate program is to continue to grow, some attention will have to be given soon to filling in these runs. This is particularly critical for those runs of serials which are not available in the region.

The Library can supply 32 out of the 80 titles listed in Ulrich's (2), and 21 out of 25 titles listed in Brown (26). This is a decided improvement over the collection of ten years ago when the Library received only 26 serials in

entomology. Our collection is strong in the basic English language journals. However, more foreign journals will be needed to adequately support research in this discipline.

The library is receiving all of the publications from the American Entomological Society and most of the publications from the Entomological Society of America as well as from the Royal Entomological Society of London. From the latter we lack two of the Symposia, several of the monographic publications, the Proceedings of the XIIth International Congress of Entomology and two of their Handbooks. The library does not have the Bulletin, Volume 8 of the Thomas Say Foundation Publications or beyond number 1 of the Entomological Publications from the Entomological Society of America.

The book collection is extensive and capable of supporting the Department's teaching and research programs. The library can supply 34 of the 38 entries listed under entomology in Volgt (3). If the collection continues to receive the attention it has received in the past, this part of the library will remain a valuable bulwark to our program.

In checking the terminal bibliographies from volume 18 (1962) of the Annual Review of Entomology, it was discovered that the library is able to supply 1,287 of the 2,138 items cited. This is an acceptable showing. An interesting point here is that most of the missing items were from the foreign entomological journals or from journals whose primary emphasis lies in disciplines other than entomology such as zoology, chemistry, etc., which indicates a need for supporting materials in these areas. The library fared somewhat better with the Hussey (17) bibliography on Coccoidea. Here we were able to supply 63 of the 89 items listed.

By way of summing up, the collection suffers from three deficiencies. First, it lacks a strong supporting collection in the entomological sciences. Second, it needs a comprehensive taxonomic unit of intermediate scope, and third, more foreign serials in order to give the entomology collection greater depth.

4. Recommendations - Entomology

a) That consideration be given to completing the Library's holdings of a significant taxonomic unit on the order of Insecta Immobilia.

b) That a major effort be made to build up the zoology, biology, and botany collections. The reader should note the sections of this survey covering the Biological Sciences (Animal Kingdom and Plant Kingdom).

c) That some attention be given to the acquisitions of serial backfiles with greatest emphasis to be placed on acquiring foreign titles not available in the region. The Department is requested to designate priorities from among the following titles and to add any titles which they feel are important:

	Library has	
a)	[illegible]	Revista Brasileira de Entomologia, Vol. 38, 1962 to date with a continuing of current volumes
b)	Entomologische Arbeiten,	Vol. 12, 1962+
c)	Entomologische Zeitung,	Vol. 12, 1962+
d)	Schweizerische Entomologische Gesellschaft, Mitteilungen,	Vol. 36, 1963+

[redacted]

[illegible] (Ex), the 10 service classified as fishery biology (Bi), and the 17 service as wildlife management (Wi).

As a more extensive basis the library is able to supply from District's guide (1) the following series: Forestry and Forestry service, 10 out of 17 titles; timber and tree service, 12 out of 18 titles; fish and fisheries service, 9 out of 17; and from the list of conservation journals including wildlife management, 18 out of 32 titles. However, it should be pointed out here that not all of these journals did have one publication as this is of interest to our topic. Despite what may appear on the surface to be deficiencies, the actual strength of the collection is not equal to the demands being placed upon it. The library has all of the basic journals and is very strong in the process of building a research collection. The primary purpose is not of a strong collection, but is to meet the needs of the users. When compared with a list [illegible] in the library from the holdings of Research in Economic Botanists, there are probably 1/2 of the 100 titles listed. This is a strong showing but has increased in the intervening four years.

The monograph collection is equally strong and viable, and needs little expansion beyond that presently being given to it. From the holdings of Economic Botanists check list compiled by Bakke (10), the library has everything except the most ephemeral items.

Another measure of a library's ability to meet the needs of the clientele is the ability to supply items referred to in reviewed bibliographies. From Volume 5, 1967 of the [illegible] Review of Economic Research, the library can supply 811 out of the 1,017 items mentioned. The library could not supply the foreign items, some Japanese and Russian journals, and the early issues for many of the journals it currently receives. This would indicate that more might be accomplished by an [illegible] holdings, especially in the holdings of foreign journals.

The wildlife management and fishery biology services of the library have much to be desired. Both departments have graduate programs but lack the necessary depth in their library holdings to merit a full scale research award. The greatest weakness, and one which affects both areas, is the scarcity of current materials in the ecological sciences. Some of the deficiencies in this collection are made up by extensive holdings in U.S. Government documents, here material from other governmental agencies (Canada, U.K., United Nations) are [illegible] most problematic library holdings for a student user. Indeed, many of these publications would be checked as an exchange basis or could be used by the University.

5. Recommendations - Areas Indicated

a) That more of the publications issued or sponsored by governmental units (states, provinces, etc.) when the merit be checked for the library on an exchange agreement when possible, but purchased if necessary. For example, all publications of the Canadian Wildlife Service should be placed on standing order since much are obtainable only here appeared in other places.

b) That the function in the holdings of Economic series the following gaps and added to the library the priority in which they [illegible] gaps listed:

[illegible] list

1) [illegible] Vol. 1-, 1964-
2) [illegible] [illegible] Vol. 89-110, 103-119, 120 (1969)-

1) Archiv für Fischereiwissenschaft. Vol. [illegible]
2) [illegible]
3) [illegible]
4) [illegible]
5) [illegible]
6) [illegible]
7) [illegible]
8) [illegible]
9) [illegible]
10) [illegible]
11) [illegible]
12) [illegible]
13) [illegible]
14) [illegible]
15) Japanese Society of Scientific Fisheries. Bulletin. Vol. [illegible]
16) Journal du Conseil. Vol. [illegible]
17) [illegible]
18) Journal of the Fisheries Research Board of Canada. Vol. [illegible]
19) Journal of the Marine Biological Association of the United Kingdom. Vol. [illegible]
20) [illegible]
21) [illegible] North Carolina State College. [illegible]
22) Zeitschrift für Fischerei und deren Hilfswissenschaften. Vol. [illegible]
23) Zeitschrift für [illegible]. Vol. [illegible]

c) That the following titles not now in the library be purchased by the College and recommendations made to the library [illegible]:

1) [illegible]
2) [illegible]
3) [illegible]
4) [illegible]
5) [illegible]
6) [illegible]
7) [illegible]
8) [illegible]
9) [illegible]
10) [illegible]
11) [illegible]
12) [illegible]
13) [illegible]
14) [illegible]
15) [illegible]
16) [illegible]
17) [illegible]
18) [illegible]
19) [illegible]

[redacted]

[redacted]. The engineering sciences require a broad spectrum of [redacted] laboratories to support their curriculum and research activities. The university, as it was created, to assess and enhance [redacted] Each and a certain amount of [redacted] the part of [redacted] the future, the college will require additional [redacted] such, such [redacted] will [redacted] and [redacted] be efficient as [redacted]

[redacted] the engineering sciences have been divided into the areas as follows: 1) a general [redacted] technology, and 2) a detailed examination of technology for [redacted] electrical, [redacted] and mechanical engineering. Each course is followed by a [redacted] of recommendations. Relevant [redacted] to laboratory, as they apply, which the separate technology or to the courses devoted to [redacted] engineering sciences. The [redacted] courses, [redacted] and [redacted] are [redacted] engineering with [redacted] [redacted] engineering reviews the [redacted] concepts [redacted] and [redacted] [redacted] [redacted] [redacted] to [redacted] engineering to [redacted] to the [redacted] to [redacted] [redacted]

[redacted] was a [redacted] [redacted] [redacted] [redacted]

[illegible]

[illegible]

[illegible]

[redacted]

[redacted]

[redacted]

[illegible]

Librarian should only consider the holdings and recommendations made for items highlighted in this report.

(2) Does the librarian subscribe to the library which holdings set to that process to obtain the following gaps closed:

a. Transactions Journal of Agricultural Engineering. Ed- only has only the [illegible] of the ten brownie numbers, 1959

b. Journal of Agricultural Engineering Research. Library has all except Vols. 1, no. 1, 1959

(3) Does the librarian consider the following journals and re- common to the library desk to enable to have placed on subscription:

a. American Agricultural Economics
b. Transactions of Agricultural Engineers, Journal, and Pro- ceedings
c. [illegible] Societies

1. Chemical Engineering. This service of the library is reasonably well adapted to serve readers for several patrolled by the U.S. including both kinds are provided. The library currently receives 10 serials, both foreign and domestic, indexed in the Chemical Engineering (CE) service. These include all the most powerful English language in chemical engineering. Holdings are complete for each serial. The library has a standing order for the U.S./Pan.E. Corporation pamphlet set to reasonably well equipped to meet the needs of the Engineer for geographic materials, although some serious and up-dating of holdings will have to be applied to the library. The library should also attempt to build up the holdings of the publications named earlier pertinent to the technician of chemical engineers to some extent. From the technician we have there the present journals, the Chemical Engineer and the Engineering, as well as indexes [illegible], [illegible] of the technician's immediate terms, the lack the U.S./Pan.E. [illegible] Chemical Data and the [illegible] Chemical Engineering Data Service. The [illegible] the engineer a small reference which "Guide for Students of Chemical Engineering" is the problem to keep trends preparing for their professional [illegible]. To offer a good cross service of the research needs in chemical technology, [illegible] devices, their that get particle materials, fuel radio- design, that get some reports, plant design, process calculations, etc. From the bibliography we here it one of the books, lacking the British Standards and the [illegible] of British Chemical Manufacturers' Safety Rules for Use in Chemical Works.

The Engineers' Council for Professional Development set U.S./Pan.E. have pre- good idea of acceptable trained engineers in chemical engineering. Of 170 trade received in the 1959 test (170), the library has 115. U.S./Pan.E. gai- taken a trial census of basic "chemical cost" in 1960. Of the cross on this test, the library has 107 out of the 1,200 books and 107 out of 150 journals. From the chemical engineering process taken in Group's (2), the library has it on of the trends.

Obviously there are some deficiencies here which need correction. Especially apparent are the absence of basic books, missing volumes from sets, and especi- ally numerous back the library does not have on corrosion, materials hygiene, etc.

As the Department's graduate program develops, the Library's acquisition program will have to follow suit. At present the Department's greatest needs are for foreign journals, both those in English as well as those not in English, and to develop holdings in those disciplines which supply resource materials for the chemical engineer, such as applied mathematics, physics, and chemistry. In addition, some thought should be given to building up Library holdings in those areas for which the Chemical Engineering staff has exhibited a strong research interest, such as petroleum chemistry, heat transfer, fluid mechanics, infrared photography, cryogenics, electrochemistry, optics of lasers, etc.

a) Recommendations - Chemical Engineering

1) That the Department review the book lists prepared by A.I.Ch.E. and I.Chem.E. so that those titles which it deems pertinent to our curricular and research needs may be purchased.

2) That consideration be given to ordering all A.I.Ch.E.-I.Chem.E. Meeting Symposia.

3) That all missing numbers of the I.Chem.E. Symposium Series be filled in.

4) That SCI Monographs from the Society of Chemical Industry be considered for purchase.

5) That Department review and make recommendations to the library regarding standing orders for the following publishers series:

a. Interscience Library of Chemical Engineering and Processing
b. International Series of Monographs in Chemical Engineering (Pergamon)
c. Lectures in Applied Mathematics (Interscience)
d. International Series of Monographs on Nuclear Energy (Pergamon)
e. McGraw-Hill Series in Chemical Engineering
f. The Monographs of the Electrochemical Society

6) That the following titles not now in the Library be reviewed by the Department and recommendations made to the Library relative to which new subscriptions are needed and in what priority:

a. Advanced Energy Conversion
b. Advances in Cryogenic Engineering
c. Advances in Electrochemistry and Electrochemical Engineering (Interscience)
d. Australian Chemical Engineering
e. British Chemical Engineering
f. British Plastics
g. Ceramic Industry
h. Chemical and Process Engineering (Leonard Hill)
i. Chemical Engineering (Khimicheskoe Mashinostroenie)
j. Doklady Chemical Technology
k. European Chemical News
l. Industrial Chemist and Chemical Manufacturer
m. Journal of Applied Chemistry, London

4. Journal of Applied Chemistry of the USSR
5. Journal of the Air Pollution Control Association
6. Physics and Chemistry of Minerals
7. The Plastics Institute, Transactions and Journal
8. Plastics Technology
9. Proceedings of the Chemical Engineering Group of the Society of Chemical Industry

f) The Department should review and make recommendations to the Library regarding the order in which they wish the following pairs closed:

4. Advances in Petroleum Chemistry and Refining, Vol. 5 and 6
5. Chemie-Ingenieur-Technik, Vol. 29-37, 1960-1965 and Vol. 39, 1967-
6. Chemical Processing, Vol. 28, 1965-
7. Chimie & Industrie = Genie Chimique, Vol. 96, 1967-
8. Electrochimica Acta, Vol. 11, 1966-
9. Heat Transfer and Fluid Mechanics Institute, Proceedings, 1952, 1953, 1959-1964, 1965-
10. Progress in Petroleum Science, Vol. 1 and 2, 1961, 1965

g) That the Library consider subscribing to a specialized indexing service on the order of Theoretical Chemical Engineering Abstracts.

4. Civil Engineering. It is difficult to categorize the Library materials pertinent to civil engineering, since workers in this field use resources from the entire collection. However, this report will limit itself to a discussion of Library materials classed in the TA-TH section of the Library. The Library currently receives 44 serials classed in Civil Engineering. This includes the ASCE Proceedings as one title, although the Proceedings is composed of journals from each of the technical divisions within the Society. From the sections covering civil engineering journals in Walch's (8), the Library has 19 out of the 137 titles listed. However, these figures should cause no alarm, since there is little need for Idaho to own all of these titles. Indeed, many are trade journals, house organs, and limited-circulation journals which would not be pertinent to our curricular or research needs. What percentage will be required at Idaho should be determined by the Department. In fact, the staff in the Civil Engineering Department may wish to select additional titles from other areas such as physics, mathematics, general engineering, etc. and should be encouraged to do so. Some evaluation and review on the part of the Civil Engineering staff is necessary if the collection is to grow and become a serviceable tool for meeting their needs. Members of the Department will also find it helpful to review the recommendations made for other disciplines in this report, especially those following the section on General Engineering.

The book collection in the TA-TH section of the Library is in need of updating. There are a number of important reference manuals we do not have. For example, the Library does not have Frederick S. Merritt's Building Construction Handbook (McGraw, 2nd ed., 1965); the American Institute of Steel Construction Handbook, Steel Construction: A Manual for ... (AISC, 5th ed., 1959); or Stubb's Handbook of Heavy Construction (McGraw, 1959). From among the titles mentioned by Voigt (9), the Library should acquire: Irving E. Harris, Handbook of Structural Design (Reinhold, 1962); the Papers from the Princeton University Conference, Engineering and World Water Resources (Princeton, 1963); and one or two

[illegible] [illegible] [illegible] [

a. [redacted]
b. [redacted]
c. [redacted]

d) How do Spurrier rate the following other holdings of civil engineering materials and consider the priority to have them added [redacted]:

a. Earthquake Engineering Research Institute, Proceedings, 1981 only
b. Institute of Traffic Engineers, Proceedings, 1950-1959
c. International Association for Bridge and Structural Engineering, Publications, 1932 (1937) & 1936 (1940)
d. Institution of Civil Engineers (Great Britain) Current Index, Vol. 1, 1977 to date with gaps
e. Soil Mechanics and Foundation Engineering, Vol. 15, 1980-
f. Symposium on Damage to Buildings, Proceedings, Vol. 1-15, 17-19, 21 (1980)

6. Electrical Engineering. The library currently receives 77 serials classed in the Electrical Engineering (TK) section. This includes publications by investigators, radio, electronics, electrical engineering, telephone, power, Current, and one or two of the popular electronics and radio journals. Current does not have all of the 1980 government serials and from the serials list provided, but only a few of the 1980-government journals or conference publications have been purchased for the library. For some the library should [redacted] the standards of the subscription journals approved by IEEE also are acceptable. Communications and Radio Engineering. In addition, the library has [redacted] three holdings of the IEEE Telecommunications Conference Record and twelve complete [redacted] Vehicular Technology Record. Nevertheless, even with these publications, the collection of basic standard with publications from professional groups within the U.S. This is not the case with the publications issued by professional groups outside the U.S., including those in English as well as those in other languages. This area of the library's holdings will require more attention as the department expands the graduate program. The Institution of Electrical Engineers (Great Britain) issues Monographs, Conference Publications (no. 9 was published in 1963), Proceedings, Electronics Letters, a journal called Electronics & Power, and Electronics & Communication Engineering. The library does not have any of the following from IEEE: Monographs, Conference Publications, or Electronics Letters.

The electrical engineering book collection would profit from a thorough weeding and could use some additions for some of the outdated topics. For assistance in up-dating the collection the reader should review the titles given in Sources (3) and in Weigt (8). From the 1979 (1978) list of books in electrical engineering, now badly dated, the library has 73 of the 113 titles mentioned. The EE collection is fairly well supported by books and journals classed in the mathematics (QA) and physics (QC) sections of the library, where material on such subjects as computer technology, solid state physics, semiconductors, optics, magnetism, etc. is classed. The weakest of these sections is that concerning computer technology, with no single group on campus systematically selecting material for this area.

Sketch (2) lists 213 serial titles under electricity and magnetism. The library has 30 of these. However, this is not as serious as would appear since

[redacted]

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]